GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 14, 2002, 10:50:38 ; Search time 75.95 Seconds
(without alignments)
45.336 Million cell updates/sec

Title: US-09-785-059-2
Perfect score: 148
Sequence: 1 RVIRVVQRACRAIRHIVRRIRQGLRRILRVV 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_032802:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	122	82.4	28	19	AAW47769	Antimicrobial pept
2	122	82.4	28	20	AAY32703	Antimicrobial pept
3	117	79.1	28	19	AAW47623	Antimicrobial pept
4	117	79.1	28	19	AAW47628	Antimicrobial pept
5	117	79.1	28	19	AAW47633	Antimicrobial pept
6	117	79.1	28	20	AAY32559	Antimicrobial pept
7	117	79.1	28	20	AAY32564	Antimicrobial pept
8	117	79.1	28	20	AAY32569	Antimicrobial pept
9	112	75.7	28	19	AAW47614	Antimicrobial pept
10	112	75.7	28	20	AAY32549	Antimicrobial pept
11	112	75.7	338	22	AAU14026	Peptide sequence f
12	112	75.7	345	21	AAB14536	HIV-1 isolate LAI
13	112	75.7	345	22	AAG63863	Amino acid sequenc
14	112	75.7	420	15	AAR53785	Translation of HIV
15	112	75.7	853	19	AAW43066	HIV-1 gp120 protei
16	112	75.7	856	14	AAR41025	Selectively deglyc
17	112	75.7	856	14	AAR41026	Selectively deglyc
18	112	75.7	856	14	AAR41027	Selectively deglyc
19	112	75.7	856	14	AAR41028	Selectively deglyc
20	112	75.7	856	14	AAR41029	Selectively deglyc
21	112	75.7	856	14	AAR41030	Selectively deglyc
22	112	75.7	856	14	AAR41031	Selectively deglyc
23	112	75.7	856	14	AAR41032	Selectively deglyc
24	112	75.7	856	21	AAY97072	Wild type HIV-1 HX
25	112	75.7	856	22	AAB45697	HIV-1/IIIB env clo
26	112	75.7	858	19	AAW43067	HIV-1 gp120 protei
27	112	75.7	863	13	AAR28955	Non-cleavable, sol
28	112	75.7	865	16	AAR73909	HIV-1 envelope pol
29	112	75.7	868	7	AAP60063	HIV virus env gene
30	112	75.7	868	7	AAP60422	Sequence of LAV vi
31	112	75.7	901	8	AAP70665	Sequence encoded b
32	108	73.0	28	19	AAW47624	Antimicrobial pept
33	108	73.0	28	19	AAW47634	Antimicrobial pept
34	108	73.0	28	20	AAY32560	Antimicrobial pept
35	108	73.0	28	20	AAY32570	Antimicrobial pept
36	107	72.3	28	19	AAW47625	Antimicrobial pept
37	107	72.3	28	19	AAW47771	Antimicrobial pept
38	107	72.3	28	19	AAW47772	Antimicrobial pept
39	107	72.3	28	19	AAW47635	Antimicrobial pept
40	107	72.3	28	20	AAY32705	Antimicrobial pept
41	107	72.3	28	20	AAY32706	Antimicrobial pept
42	107	72.3	28	20	AAY32561	Antimicrobial pept
43	107	72.3	28	20	AAY32571	Antimicrobial pept
44	107	72.3	412	11	AAR05095	Synthetic HIV-1 tr
45	107	72.3	704	11	AAR05096	PSD302.PEP HIV-1 g

ALIGNMENTS

RESULT 1
AAW47769
ID AAW47769 standard; peptide; 28 AA.
XX
AC AAW47769;
XX
DT 26-MAY-1998 (first entry)
XX
DE Antimicrobial peptide LLP1 analogue.
XX
KW Antimicrobial; transmembrane protein; TM; lentivirus lytic peptide;
KW LLP; amphipathic; antibacterial; antifungal; antiviral; antiprotozoal.
XX
OS Synthetic.
OS Human immunodeficiency virus.
XX
PN US5714577-A.
XX
PD 03-FEB-1998.
XX
PF 24-JAN-1997; 97US-0786748.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1998-158352/14.
XX
PT Retroviral TM peptides - useful as antibacterial agents
XX
PS Disclosure; Column 19; 59pp; English.

XX
CC The invention relates to new antimicrobial peptides which correspond to
CC amino acid sequences in the transmembrane proteins of lentiviruses, in
CC particular HIV and SIV. These peptides comprise arginine rich sequences
CC which, when modelled for secondary structure, display high
CC amphipathicity and hydrophobic moment. Also disclosed are structural
CC and functional analogues and homologues of these peptides which also
CC display antimicrobial activity. The peptides are highly inhibitory to
CC microorganisms (bacteria, fungi, viruses and protozoa) but significantly
CC less toxic to red blood cells and other normal mammalian cells. Activity
CC is demonstrated against Gram positive and negative bacteria including
CC Pseudomonas aeruginosa, Staphylococcus aureus, Enterococcus faecalis and
CC Serratia marcescens.
CC The present sequence is one of 169 disclosed specific examples of
CC the new peptides. It is an analogue of the peptide designated LLP1
CC (see AAW47614) which is a peptide from the transmembrane protein (gp41)
CC of HIV strain HXB2R.
XX
SQ Sequence 28 AA;

Query Match 82.4%; Score 122; DB 19; Length 28;
Best Local Similarity 92.9%; Pred. No. 1.5e-10;
Matches 26; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||||||| |||||||| ||||||||||
Db 1 rvirvvqgacrairhiprrirqglrril 28

RESULT 2
AAY32703
ID AAY32703 standard; peptide; 28 AA.
XX
AC AAY32703;
XX
DT 21-OCT-1999 (first entry)
XX
DE Antimicrobial peptide LLP1 analogue.
XX
KW Antimicrobial peptide; LLP1; SLP-1; LLP2; SLP2A; SLP2B; ELP; infection;
KW growth inhibitor; microorganism; virus; gene therapy; vector production;
KW sterilisation.
XX
OS Synthetic.
OS Human immunodeficiency virus type 1.
XX
PN US5945507-A.
XX
PD 31-AUG-1999.
XX
PF 18-SEP-1997; 97US-0932682.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
PR 18-SEP-1997; 97US-0932682.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1999-508189/42.
XX
PT Antimicrobial peptides useful for treating microbial infections
XX
PS Disclosure; Column 21; 62pp; English.
XX
CC This sequence represents an antimicrobial peptide of the invention, and
CC is an analogue of the peptide LLP1 (see AAY32549). The peptides can be
CC used for treating infections caused by Staphylococcus aureus,
CC methicillin resistant S. aureus, Pseudomonas aeruginosa, Enterococcus
CC faecalis, S. marcescens, Escherichia coli, fungi, protozoa and viruses in
CC a mammalian host. They can be used to inhibit growth of diverse
CC microorganisms such as bacteria, fungi, protozoa and DNA and RNA viruses
CC and can be used in tissue culture to inhibit unwanted microbial growth,
CC particularly for the production of recombinant proteins or vectors for
CC gene therapy. They can also be used in preventing infections through the
CC sterilisation of wounds prior to suture and to sterilise surgical
CC instruments. The unique structure of these antimicrobial peptides
CC imparts high potency while selectivity is maintained, they are
CC moderately haemolytic but only lyse red blood cells at high
CC concentrations unlike melittin, a peptide extracted from bee venom, which
CC is highly active against bacteria and lyses red blood cells showing
CC little selectivity. The peptides target a membrane structure which makes
CC it more difficult for a microorganism to develop a mechanism of
CC resistance against this type of antibiotic. Their small size makes them
CC relatively simple to prepare by standard synthetic peptide chemistry.
XX
SQ Sequence 28 AA;

Query Match 82.4%; Score 122; DB 20; Length 28;
Best Local Similarity 92.9%; Pred. No. 1.5e-10;
Matches 26; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||||||| |||||||| ||||||||||
Db 1 rvirvvqgacrairhiprrirqglrril 28

RESULT 3
AAW47623
ID AAW47623 standard; peptide; 28 AA.
XX
AC AAW47623;
XX
DT 26-MAY-1998 (first entry)
XX
DE Antimicrobial peptide LLP1 analogue.
XX
KW Antimicrobial; transmembrane protein; TM; lentivirus lytic peptide;
KW LLP; amphipathic; antibacterial; antifungal; antiviral; antiprotozoal.
XX
OS Synthetic.
OS Human immunodeficiency virus.
XX
PN US5714577-A.
XX
PD 03-FEB-1998.
XX
PF 24-JAN-1997; 97US-0786748.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1998-158352/14.
XX
PT Retroviral TM peptides - useful as antibacterial agents
XX
PS Disclosure; Column 9; 59pp; English.
XX
CC The invention relates to new antimicrobial peptides which correspond to
CC amino acid sequences in the transmembrane proteins of lentiviruses, in
CC particular HIV and SIV. These peptides comprise arginine rich sequences
CC which, when modelled for secondary structure, display high
CC amphipathicity and hydrophobic moment. Also disclosed are structural
CC and functional analogues and homologues of these peptides which also
CC display antimicrobial activity. The peptides are highly inhibitory to
CC microorganisms (bacteria, fungi, viruses and protozoa) but significantly
CC less toxic to red blood cells and other normal mammalian cells. Activity
CC is demonstrated against Gram positive and negative bacteria including
CC Pseudomonas aeruginosa, Staphylococcus aureus, Enterococcus faecalis and

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CC   Serratia marcescens.
CC   The present sequence is one of 169 disclosed specific examples of
CC   the new peptides. It is an analogue of the peptide designated LLP1
CC   (see AAW47614) which is a peptide from the transmembrane protein (gp41)
CC   of HIV strain HXB2R.
XX
SQ   Sequence   28 AA;


  Query Match             79.1%;  Score 117;  DB 19;  Length 28;
  Best Local Similarity   89.3%;  Pred. No. 7.8e-10;
  Matches   25;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
          ||||||| |||||||| ||||||| |||
Db      1 rvirvvqgacrairhiprrirqgleril 28


RESULT   4
AAW47628
ID   AAW47628 standard; peptide; 28 AA.
XX
AC   AAW47628;
XX
DT   26-MAY-1998  (first entry)
XX
DE   Antimicrobial peptide LLP1 analogue.
XX
KW   Antimicrobial; transmembrane protein; TM; lentivirus lytic peptide;
KW   LLP; amphipathic; antibacterial; antifungal; antiviral; antiprotozoal.
XX
OS   Synthetic.
OS   Human immunodeficiency virus.
XX
PN   US5714577-A.
XX
PD   03-FEB-1998.
XX
PF   24-JAN-1997;   97US-0786748.
XX
PR   26-JAN-1996;   96US-0010634.
PR   24-JAN-1997;   97US-0786748.
XX
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Mietzner TA,  Montelaro RC,  Tencza SB;
XX
DR   WPI; 1998-158352/14.
XX
PT   Retroviral TM peptides - useful as antibacterial agents
XX
PS   Disclosure; Column 9; 59pp; English.
XX
CC   The invention relates to new antimicrobial peptides which correspond to
CC   amino acid sequences in the transmembrane proteins of lentiviruses, in
CC   particular HIV and SIV. These peptides comprise arginine rich sequences
CC   which, when modelled for secondary structure, display high
CC   amphipathicity and hydrophobic moment. Also disclosed are structural
CC   and functional analogues and homologues of these peptides which also
CC   display antimicrobial activity. The peptides are highly inhibitory to
CC   microorganisms (bacteria, fungi, viruses and protozoa) but significantly
CC   less toxic to red blood cells and other normal mammalian cells. Activity
CC   is demonstrated against Gram positive and negative bacteria including
CC   Pseudomonas aeruginosa, Staphylococcus aureus, Enterococcus faecalis and
CC   Serratia marcescens.
CC   The present sequence is one of 169 disclosed specific examples of
CC   the new peptides. It is an analogue of the peptide designated LLP1
CC   (see AAW47614) which is a peptide from the transmembrane protein (gp41)
CC   of HIV strain HXB2R.
XX
SQ   Sequence   28 AA;


  Query Match             79.1%;  Score 117;  DB 19;  Length 28;
  Best Local Similarity   89.3%;  Pred. No. 7.8e-10;
  Matches   25;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
          ||| ||| |||||||| ||||||||||
Db      1 rvievvqgacrairhiprrirqglrril 28


RESULT   5
AAW47633
ID   AAW47633 standard; peptide; 28 AA.
XX
AC   AAW47633;
XX
DT   26-MAY-1998  (first entry)
XX
DE   Antimicrobial peptide LLP1 analogue.
XX
KW   Antimicrobial; transmembrane protein; TM; lentivirus lytic peptide;
KW   LLP; amphipathic; antibacterial; antifungal; antiviral; antiprotozoal.
XX
OS   Synthetic.
OS   Human immunodeficiency virus.
XX
PN   US5714577-A.
XX
PD   03-FEB-1998.
XX
PF   24-JAN-1997;   97US-0786748.
XX
PR   26-JAN-1996;   96US-0010634.
PR   24-JAN-1997;   97US-0786748.
XX
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Mietzner TA,  Montelaro RC,  Tencza SB;
XX
DR   WPI; 1998-158352/14.
XX
PT   Retroviral TM peptides - useful as antibacterial agents
XX
PS   Disclosure; Column 9; 59pp; English.
XX
CC   The invention relates to new antimicrobial peptides which correspond to
CC   amino acid sequences in the transmembrane proteins of lentiviruses, in
CC   particular HIV and SIV. These peptides comprise arginine rich sequences
CC   which, when modelled for secondary structure, display high
CC   amphipathicity and hydrophobic moment. Also disclosed are structural
CC   and functional analogues and homologues of these peptides which also
CC   display antimicrobial activity. The peptides are highly inhibitory to
CC   microorganisms (bacteria, fungi, viruses and protozoa) but significantly
CC   less toxic to red blood cells and other normal mammalian cells. Activity
CC   is demonstrated against Gram positive and negative bacteria including
CC   Pseudomonas aeruginosa, Staphylococcus aureus, Enterococcus faecalis and
CC   Serratia marcescens.
CC   The present sequence is one of 169 disclosed specific examples of
CC   the new peptides. It is an analogue of the peptide designated LLP1
CC   (see AAW47614) which is a peptide from the transmembrane protein (gp41)
CC   of HIV strain HXB2R.
XX
SQ   Sequence   28 AA;


  Query Match             79.1%;  Score 117;  DB 19;  Length 28;
  Best Local Similarity   89.3%;  Pred. No. 7.8e-10;
  Matches   25;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
          ||||||| |||||||| ||||||| |||
Db      1 rvirvvqgacrairhiprrirqgleril 28
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RESULT   6
AAY32559
ID   AAY32559 standard; peptide; 28 AA.
XX
AC   AAY32559;
XX
DT   21-OCT-1999  (first entry)
XX
DE   Antimicrobial peptide LLP1 analogue.
XX
KW   Antimicrobial peptide; LLP1; SLP-1; LLP2; SLP2A; SLP2B; ELP; infection;
KW   growth inhibitor; microorganism; virus; gene therapy; vector production;
KW   sterilisation.
XX
OS   Synthetic.
OS   Human immunodeficiency virus type 1.
XX
PN   US5945507-A.
XX
PD   31-AUG-1999.
XX
PF   18-SEP-1997;   97US-0932682.
XX
PR   26-JAN-1996;   96US-0010634.
PR   24-JAN-1997;   97US-0786748.
PR   18-SEP-1997;   97US-0932682.
XX
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Mietzner TA,  Montelaro RC,  Tencza SB;
XX
DR   WPI; 1999-508189/42.
XX
PT   Antimicrobial peptides useful for treating microbial infections
XX
PS   Disclosure; Column 9;. 62pp; English.
XX
CC   This sequence represents an antimicrobial peptide of the invention, and
CC   is an analogue of the peptide LLP1 (see AAY32549). The peptides can be
CC   used for treating infections caused by Staphylococcus aureus,
CC   methicillin resistant S. aureus, Pseudomonas aeruginosa, Enterococcus
CC   faecalis, S. marcescens, Escherichia coli, fungi, protozoa and viruses in
CC   a mammalian host. They can be used to inhibit growth of diverse
CC   microorganisms such as bacteria, fungi, protozoa and DNA and RNA viruses
CC   and can be used in tissue culture to inhibit unwanted microbial growth,
CC   particularly for the production of recombinant proteins or vectors for
CC   gene therapy. They can also be used in preventing infections through the
CC   sterilisation of wounds prior to suture and to sterilise surgical
CC   instruments. The unique structure of these antimicrobial peptides
CC   imparts high potency while selectivity is maintained, they are
CC   moderately haemolytic but only lyse red blood cells at high
CC   concentrations unlike melittin, a peptide extracted from bee venom, which
CC   is highly active against bacteria and lyses red blood cells showing
CC   little selectivity. The peptides target a membrane structure which makes
CC   it more difficult for a microorganism to develop a mechanism of
CC   resistance against this type of antibiotic. Their small size makes them
CC   relatively simple to prepare by standard synthetic peptide chemistry.
XX
SQ   Sequence   28 AA;


  Query Match             79.1%;  Score 117;  DB 20;  Length 28;
  Best Local Similarity   89.3%;  Pred. No. 7.8e-10;
  Matches   25;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
           ||||||| |||||||| ||||||| |||
Db       1 rvirvvqgacrairhiprrirqgleril 28


RESULT   7
AAY32564
ID   AAY32564 standard; peptide; 28 AA.
XX
AC   AAY32564;
XX
DT   21-OCT-1999  (first entry)
XX
DE   Antimicrobial peptide LLP1 analogue.
XX
KW   Antimicrobial peptide; LLP1; SLP-1; LLP2; SLP2A; SLP2B; ELP; infection;
KW   growth inhibitor; microorganism; virus; gene therapy; vector production;
KW   sterilisation.
XX
OS   Synthetic.
OS   Human immunodeficiency virus type 1.
XX
PN   US5945507-A.
XX
PD   31-AUG-1999.
XX
PF   18-SEP-1997;   97US-0932682.
XX
PR   26-JAN-1996;   96US-0010634.
PR   24-JAN-1997;   97US-0786748.
PR   18-SEP-1997;   97US-0932682.
XX
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Mietzner TA,  Montelaro RC,  Tencza SB;
XX
DR   WPI; 1999-508189/42.
XX
PT   Antimicrobial peptides useful for treating microbial infections
XX
PS   Disclosure; Column 9; 62pp; English.
XX
CC   This sequence represents an antimicrobial peptide of the invention, and
CC   is an analogue of the peptide LLP1 (see AAY32549). The peptides can be
CC   used for treating infections caused by Staphylococcus aureus,
CC   methicillin resistant S. aureus, Pseudomonas aeruginosa, Enterococcus
CC   faecalis, S. marcescens, Escherichia coli, fungi, protozoa and viruses in
CC   a mammalian host. They can be used to inhibit growth of diverse
CC   microorganisms such as bacteria, fungi, protozoa and DNA and RNA viruses
CC   and can be used in tissue culture to inhibit unwanted microbial growth,
CC   particularly for the production of recombinant proteins or vectors for
CC   gene therapy. They can also be used in preventing infections through the
CC   sterilisation of wounds prior to suture and to sterilise surgical
CC   instruments. The unique structure of these antimicrobial peptides
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CC   moderately haemolytic but only lyse red blood cells at high
CC   concentrations unlike melittin, a peptide extracted from bee venom, which
CC   is highly active against bacteria and lyses red blood cells showing
CC   little selectivity. The peptides target a membrane structure which makes
CC   it more difficult for a microorganism to develop a mechanism of
CC   resistance against this type of antibiotic. Their small size makes them
CC   relatively simple to prepare by standard synthetic peptide chemistry.
XX
SQ   Sequence   28 AA;


  Query Match             79.1%;  Score 117;  DB 20;  Length 28;
  Best Local Similarity   89.3%;  Pred. No. 7.8e-10;
  Matches   25;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
           ||| ||| |||||||| ||||||||||
Db       1 rvievvqgacrairhiprrirqglrril 28


RESULT   8
AAY32569
ID   AAY32569 standard; peptide; 28 AA.
XX
AC   AAY32569;
XX
```

DT 21-OCT-1999 (first entry)
XX
DE Antimicrobial peptide LLP1 analogue.
XX
KW Antimicrobial peptide; LLP1; SLP-1; LLP2; SLP2A; SLP2B; ELP; infection;
KW growth inhibitor; microorganism; virus; gene therapy; vector production;
KW sterilisation.
XX
OS Synthetic.
OS Human immunodeficiency virus type 1.
XX
PN US5945507-A.
XX
PD 31-AUG-1999.
XX
PF 18-SEP-1997; 97US-0932682.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
PR 18-SEP-1997; 97US-0932682.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1999-508189/42.
XX
PT Antimicrobial peptides useful for treating microbial infections
XX
PS Disclosure; Column 9; 62pp; English.
XX
CC This sequence represents an antimicrobial peptide of the invention, and
CC is an analogue of the peptide LLP1 (see AAY32549). The peptides can be
CC used for treating infections caused by Staphylococcus aureus,
CC methicillin resistant S. aureus, Pseudomonas aeruginosa, Enterococcus
CC faecalis, S. marcescens, Escherichia coli, fungi, protozoa and viruses in
CC a mammalian host. They can be used to inhibit growth of diverse
CC microorganisms such as bacteria, fungi, protozoa and DNA and RNA viruses
CC and can be used in tissue culture to inhibit unwanted microbial growth,
CC particularly for the production of recombinant proteins or vectors for
CC gene therapy. They can also be used in preventing infections through the
CC sterilisation of wounds prior to suture and to sterilise surgical
CC instruments. The unique structure of these antimicrobial peptides
CC imparts high potency while selectivity is maintained, they are
CC moderately haemolytic but only lyse red blood cells at high
CC concentrations unlike melittin, a peptide extracted from bee venom, which
CC is highly active against bacteria and lyses red blood cells showing
CC little selectivity. The peptides target a membrane structure which makes
CC it more difficult for a microorganism to develop a mechanism of
CC resistance against this type of antibiotic. Their small size makes them
CC relatively simple to prepare by standard synthetic peptide chemistry.
XX
SQ Sequence 28 AA;

Query Match 79.1%; Score 117; DB 20; Length 28;
Best Local Similarity 89.3%; Pred. No. 7.8e-10;
Matches 25; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||||||| |||||||| ||||||| |||
Db 1 rvirvvqgacrairhiprrirqgleril 28

RESULT 9
AAW47614
ID AAW47614 standard; peptide; 28 AA.
XX
AC AAW47614;
XX
DT 26-MAY-1998 (first entry)
XX
DE Antimicrobial peptide HIVHXB2R 828-855, or LLP1.
XX
KW Antimicrobial; transmembrane protein; TM; lentivirus lytic peptide;
KW LLP; amphipathic; antibacterial; antifungal; antiviral; antiprotozoal.
XX
OS Human immunodeficiency virus.
XX
PN US5714577-A.
XX
PD 03-FEB-1998.
XX
PF 24-JAN-1997; 97US-0786748.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1998-158352/14.
XX
PT Retroviral TM peptides - useful as antibacterial agents
XX
PS Disclosure; Column 5; 59pp; English.
XX
CC The invention relates to new antimicrobial peptides which correspond to
CC amino acid sequences in the transmembrane proteins of lentiviruses, in
CC particular HIV and SIV. These peptides comprise arginine rich sequences
CC which, when modelled for secondary structure, display high
CC amphipathicity and hydrophobic moment. Also disclosed are structural
CC and functional analogues and homologues of these peptides which also
CC display antimicrobial activity. The peptides are highly inhibitory to
CC microorganisms (bacteria, fungi, viruses and protozoa) but significantly
CC less toxic to red blood cells and other normal mammalian cells. Activity
CC is demonstrated against Gram positive and negative bacteria including
CC Pseudomonas aeruginosa, Staphylococcus aureus, Enterococcus faecalis and
CC Serratia marcescens.
CC The present sequence is one of 169 disclosed specific examples of
CC the new peptides. It is called LLP1 and corresponds to residues 828-855
CC of the transmembrane protein (gp41) of HIV strain HXB2R.
XX
SQ Sequence 28 AA;

Query Match 75.7%; Score 112; DB 19; Length 28;
Best Local Similarity 85.7%; Pred. No. 4e-09;
Matches 24; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||| ||| |||||||| ||||||| |||
Db 1 rvievvqgacrairhiprrirqgleril 28

RESULT 10
AAY32549
ID AAY32549 standard; peptide; 28 AA.
XX
AC AAY32549;
XX
DT 21-OCT-1999 (first entry)
XX
DE Antimicrobial peptide LLP1.
XX
KW Antimicrobial peptide; LLP1; SLP-1; LLP2; SLP2A; SLP2B; ELP; infection;
KW growth inhibitor; microorganism; virus; gene therapy; vector production;
KW sterilisation.
XX
OS Human immunodeficiency virus type 1.
XX
PN US5945507-A.
XX
PD 31-AUG-1999.
XX

PF 18-SEP-1997; 97US-0932682.
XX
PR 26-JAN-1996; 96US-0010634.
PR 24-JAN-1997; 97US-0786748.
PR 18-SEP-1997; 97US-0932682.
XX
PA (UYPI-) UNIV PITTSBURGH.
XX
PI Mietzner TA, Montelaro RC, Tencza SB;
XX
DR WPI; 1999-508189/42.
XX
PT Antimicrobial peptides useful for treating microbial infections
XX
PS Example 1; Column 5; 62pp; English.
XX
CC This sequence represents the antimicrobial peptide LLP1, and was used
CC to design the peptide analogues of the invention. The peptides can be
CC used for treating infections caused by Staphylococcus aureus, methicillin
CC resistant S. aureus, Pseudomonas aeruginosa, Enterococcus faecalis,
CC S. marcescens, Escherichia coli, fungi, protozoa and viruses in a
CC mammalian host. They can be used to inhibit growth of diverse
CC microorganisms such as bacteria, fungi, protozoa and DNA and RNA viruses
CC and can be used in tissue culture to inhibit unwanted microbial growth,
CC particularly for the production of recombinant proteins or vectors for
CC gene therapy. They can also be used in preventing infections through the
CC sterilisation of wounds prior to suture and to sterilise surgical
CC instruments. The unique structure of these antimicrobial peptides imparts
CC high potency while selectivity is maintained, they are moderately
CC haemolytic but only lyse red blood cells at high concentrations unlike
CC melittin, a peptide extracted from bee venom, which is highly active
CC against bacteria and lyses red blood cells showing little selectivity.
CC The peptides target a membrane structure which makes it more difficult
CC for a microorganism to develop a mechanism of resistance against this
CC type of antibiotic. Their small size makes them relatively simple to
CC prepare by standard synthetic peptide chemistry.
XX
SQ Sequence 28 AA;

Query Match 75.7%; Score 112; DB 20; Length 28;
Best Local Similarity 85.7%; Pred. No. 4e-09;
Matches 24; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||| ||| |||||||| ||||||| |||
Db 1 rvievvqgacrairhiprrirqgleril 28

RESULT 11
AAU14026
ID AAU14026 standard; peptide; 338 AA.
XX
AC AAU14026;
XX
DT 21-NOV-2001 (first entry)
XX
DE Peptide sequence from HIV-1 isolate BRU enveloped protein gp41.
XX
KW Anti-retroviral; DP178-like; DP107-like; transmembrane protein gp41;
KW antifusogenic; antiviral; HIV transmission.
XX
OS Human immunodeficiency virus type 1 isolate BRU.
XX
PN WO200151673-A2.
XX
PD 19-JUL-2001.
XX
PF 05-JUL-2000; 2000WO-US35727.
XX
PR 09-JUL-1999; 99US-0350841.
XX
PA (TRIM-) TRIMERIS INC.
XX
PI Jeffs P, Lackey JW, Erickson JB, Lawless MK, Merutka G;
XX
DR WPI; 2001-442157/47.
XX
PT Identifying a compound that inhibits the formation of or disrupts a
PT DP107/DP178 complex, especially compounds with antifusogenic, antiviral
PT or intracellular modulatory activity, by detecting the formation of a
PT DP107/DP178 complex -
XX
PS Disclosure; Fig 20; 259pp; English.
XX
CC The present invention relates to peptides which exhibit anti-retroviral
CC activity. The peptides of the invention (AAU12559-AAU14009) comprise
CC DP178-like and DP107-like peptides. The DP178 peptide corresponds
CC to amino acids 639-673 of the transmembrane protein gp41 from human
CC immunodeficiency virus 1 (HIV-1) isolate LAI. The DP107 peptide
CC corresponds to amino acids 558-595 of gp41 from HIV-1LAI. The invention
CC also relates to a method of identifying compounds that inhibit the
CC formation of or disrupts a DP107/DP178 complex. The method comprises
CC detecting the formation of a DP107/DP178 complex, both in the presence
CC or absence of a test compound, in a reaction mixture containing DP107
CC and DP178 peptides. The method is useful for identifying compounds,
CC including small molecule compounds, which may themselves exhibit
CC antifusogenic, antiviral or intracellular modulatory activity. The
CC DP178-like/DP107-like peptides are useful to inhibit human and non-human
CC retroviral, particularly HIV, transmission to uninfected cells. The
CC present sequence represents a peptide sequence from HIV-1 isolate
CC BRU enveloped protein gp41.
XX
SQ Sequence 338 AA;

Query Match 75.7%; Score 112; DB 22; Length 338;
Best Local Similarity 85.7%; Pred. No. 5e-08;
Matches 24; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
||| ||| |||||||| ||||||| |||
Db 310 rvievvqgacrairhiprrirqgleril 337

RESULT 12
AAB14536
ID AAB14536 standard; Protein; 345 AA.
XX
AC AAB14536;
XX
DT 24-NOV-2000 (first entry)
XX
DE HIV-1 isolate LAI gp41 protein.
XX
KW HIV-1; gp41; N-helical domain; heptad repeat region; C-helical domain;
KW gp41 transmembrane-proximal amphipathic alpha-helical segment;
KW core 6-helix bundle; viral entry inhibition; immunogenic;
KW antibody; humoral response; broad spectrum vaccine; anti-HIV;
KW envelope glycoprotein; prophylaxis; therapy; group M; subtype B;
KW isolate LAI.
XX
OS Human immunodeficiency virus type 1.
XX
PN WO200040616-A1.
XX
PD 13-JUL-2000.
XX
PF 10-JAN-2000; 2000WO-US00456.
XX
PR 08-JAN-1999; 99US-0115404.
PR 07-JAN-2000; 2000US-0480336.
XX
PA (WILD/) WILD C T.
PA (WEIS/) WEISS C D.
XX

PI Wild CT, Weiss CD;
XX
DR WPI; 2000-465959/40.
XX
PT Raising neutralizing antibody response to human immunodeficiency virus,
PT comprises administering a polypeptide capable of forming a stable
PT coiled-coil solution structure -
XX
PS Disclosure; Page 22; 97pp; English.
XX
CC The invention relates to raising a neutralising antibody response to a
CC broad spectrum of HIV (human immunodeficiency virus) strains and
CC isolates, comprising the administration of a peptide which corresponds
CC to or mimics highly conserved portions of the gp41 envelope glycoprotein
CC which are important in mediating the process of viral entry into host
CC cells. Such peptides can correspond to or mimic the coiled coil
CC solution structure of the N-helical domain (the heptad repeat
CC region), or can correspond or mimic the C-helical domain (the
CC transmembrane-proximal amphipathic alpha-helical segment), or the
CC gp41 core 6-helix bundle, which is formed by the interaction of
CC the N- and C-helical domains of three gp41 proteins. The peptides
CC can be administered either singly or as a combination (particularly
CC a combination of N-helical and C-helical peptides), and can be
CC multimerised. For example, N- and C-helical domain peptides can be
CC alternately linked together to form a peptide which mimics the core
CC 6-helix bundle. Administration of the peptide(s) generates a humoral
CC response, with the production of antibodies against gp41 structures
CC involved in viral entry. As these portions of gp41 are well conserved,
CC such antibodies may be effective against a broad range of HIV strains
CC and isolates. The peptide compositions may be administered as a
CC prophylactic or therapeutic vaccine to generate antibodies which reduce
CC or inhibit the ability of HIV to infect uninfected cells. A composition
CC comprising polyclonal or monoclonal antibodies can be administered to
CC reduce HIV infection of uninfected cells. Antibodies raised against
CC entry-relevant gp41 structures may also be used therapeutically and as
CC tools to further elucidate the mechanism of HIV cell entry. The
CC present sequence represents HIV-1 group M, subtype B, isolate LAI
CC gp41 protein.
XX
SQ Sequence 345 AA;

Query Match 75.7%; Score 112; DB 21; Length 345;
Best Local Similarity 85.7%; Pred. No. 5.1e-08;
Matches 24; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

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Qy      1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
          ||| ||| |||||||| ||||||| |||
Db    317 rvievvqgacrairhiprrirqgleril 344
```

RESULT 13
AAG63863
ID AAG63863 standard; peptide; 345 AA.
XX
AC AAG63863;
XX
DT 29-OCT-2001 (first entry)
XX
DE Amino acid sequence of a HIV-1 gp41 protein.
XX
KW HIV-1; isolate LAI; gp41; viral entry; envelope protein; glycoprotein;
KW viral infection; antiviral.
XX
OS Human immunodeficiency virus type 1.
XX
PN WO200159457-A2.
XX
PD 16-AUG-2001.
XX
PF 09-FEB-2001; 2001WO-US04030.
XX
PR 10-FEB-2000; 2000US-0181543.
PR 28-SEP-2000; 2000US-0235901.
XX
PA (PANA-) PANACOS PHARM INC.
XX
PI Wild CT, Allaway GP;
XX
DR WPI; 2001-522493/57.
XX
PT Screening for inhibitors of viral entry structure formation by
PT selectively triggering the formation of one or more critical entry
PT intermediates in cell-surface-expressed viral envelope and probing for
PT its formation -
XX
PS Disclosure; Page 28; 68pp; English.
XX
CC The present sequence represents a Human immunodeficiency virus type 1
CC (HIV-1) group M, subtype B, isolate LAI, gp41 protein. The peptide is
CC used to raise antibodies for use in the method of the invention. The
CC specification describes a method of screening for inhibitors of viral
CC entry structure formation. The method comprises contacting a viral
CC envelope protein or glycoprotein (e.g. gp41) with a triggering agent and
CC a candidate compound to form a mixture, and measuring the effect that
CC the candidate compound has on the formation of conformational
CC intermediates. The effect of the candidate compound can be measured by
CC antibody binding to these conformational intermediates. The compounds
CC identified by the method are useful as inhibitors for inhibiting or
CC preventing viral infection and to treat humans infected with HIV-1 or
CC other viruses. This antiviral compounds can also be used to inactivate
CC viruses in body fluids, e.g. blood or blood compounds used for
CC therapeutic purposes. The assay is also useful for detecting antibodies
CC in virus-infected individuals or virus-infected body fluids or tissues
CC that inhibit entry-relevant conformational changes in one or more viral
CC envelope proteins or glycoproteins. The presence of the antibodies in
CC infected individuals or samples is of prognostic value.
XX
SQ Sequence 345 AA;

Query Match 75.7%; Score 112; DB 22; Length 345;
Best Local Similarity 85.7%; Pred. No. 5.1e-08;
Matches 24; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

```
Qy      1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
          ||| ||| |||||||| ||||||| |||
Db    317 rvievvqgacrairhiprrirqgleril 344
```

RESULT 14
AAR53785
ID AAR53785 standard; Protein; 420 AA.
XX
AC AAR53785;
XX
DT 28-DEC-1994 (first entry)
XX
DE Translation of HIV-1 in the region encoding the gp41 polypeptide.
XX
KW Human immunodeficiency virus; HIV-1; AIDS; lentivirus; TM protein;
KW extracellular protein; transmembrane protein; gp41.
XX
OS HIV-1.
XX
FH Key Location/Qualifiers
FT Protein 43..387
FT /label= gp41
XX
PN WO9412533-A.
XX
PD 09-JUN-1994.
XX
PF 12-JAN-1993; 93WO-US00212.
XX
PR 23-NOV-1992; 92US-0979975.

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XX
PA   (HARD ) HARVARD COLLEGE.
XX
PI   Essex ME,  Lee TH,  Yu X;
XX
DR   WPI; 1994-200197/24.
DR   N-PSDB; AAQ66275.
XX
PT   Method for treating HIV patients - comprises administration of
PT   mutated Gp41 polypeptide
XX
PS   Claim 11; Fig 1; 54pp; English.
XX
CC   The inventors claim a method of treating a patient infected with HIV
CC   by administering a mutated gp41 polypeptide or a therapeutic
CC   composition comprising nucleic acid encoding the mutant gp41
CC   polypeptide in an expressible genetic construction. The mutant gp41
CC   polypeptide contains a deletion of at least one AA in at least one
CC   of the following regions of wild type gp41 (AAR53783): AAs 844-856;
CC   814-856; 796-856; 776-856; 753-856; or 710-856, effective to either
CC   disrupt viral replication or HIV or disrupt the assembly of viral
CC   Env proteins in an HIV infected cell. AAQ66275.corresp. to bps 7631-
CC   8890 of wt HIV-1. X in the AA sequence represents the posn. of a
CC   stop codon in AAQ66275.
XX
SQ   Sequence   420 AA;


  Query Match             75.7%;  Score 112;  DB 15;  Length 420;
  Best Local Similarity   85.7%;  Pred. No. 6.2e-08;
  Matches   24;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
           ||| ||| |||||||| ||||||| |||
Db     359 rvievvqgacrairhiprrirqgleril 386


RESULT  15
AAW43066
ID   AAW43066 standard; peptide; 853 AA.
XX
AC   AAW43066;
XX
DT   11-SEP-1998  (first entry)
XX
DE   HIV-1 gp120 protein fragment from isolate HXB2.
XX
KW   gp120 protein; purification; fractionation; ion exchange; chromatography;
KW   binding affinity; CD4; hydrophobic interaction; size exclusion; vaccine.
XX
OS   Human immunodeficiency virus type 1.
XX
PN   US5696238-A.
XX
PD   09-DEC-1997.
XX
PF   11-MAY-1995;   95US-0439286.
XX
PR   20-AUG-1991;   91US-0684963.
PR   16-AUG-1993;   93US-0109002.
PR   09-MAY-1994;   94US-0240073.
PR   11-MAY-1995;   95US-0439286.
XX
PA   (CHIR ) CHIRON CORP.
XX
PI   Haigwood NL,  Scandella C;
XX
DR   WPI; 1998-041353/04.
XX
PT   Purification of HIV gp120 - using chromatographic methods
XX
PS   Disclosure; Fig 2A-W; 53pp; English.
XX
CC   AAW43066-W43080 are fragments of the gp120 protein from different human
CC   immunodeficiency virus type I (HIV-1) isolates. These proteins are used
CC   in a novel method for purifying HIV gp120 so as to provide a purified
CC   gp120 glycopeptide having protein/protein binding properties
CC   substantially identical to natural viral HIV gp120. The method involves
CC   fractionating a crude gp120 preparation containing full-length,
CC   glycosylated gp120 using ion exchange chromatography so as to provide a
CC   first collection of fractions. A a fraction from the first collection is
CC   selected that exhibits specific binding affinity for CD4 peptide,
CC   thereby producing a first fractionated material. The first fractionated
CC   material is fractionated by hydrophobic interaction chromatography so as
CC   to provide a second collection of fractions from which a second
CC   collection is selected that exhibits specific binding affinity for CD4
CC   peptide. This second fraction is fractionated by size exclusion
CC   chromatography so as to provide a third collection of fractions
CC   exhibiting specific binding affinity for CD4 peptide, thereby providing
CC   the purified gp120. The purified gp120 can be used for antibody
CC   production and in vaccines.
XX
SQ   Sequence   853 AA;


  Query Match             75.7%;  Score 112;  DB 19;  Length 853;
  Best Local Similarity   85.7%;  Pred. No. 1.3e-07;
  Matches   24;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 RVIRVVQRACRAIRHIVRRIRQGLRRIL 28
           ||| ||| |||||||| ||||||| |||
Db     825 rvievvqgacrairhiprrirqgleril 852


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Job time: 344 sec
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